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Dual Representation of the Concept of Aggression

by

(C)

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Prace te dedykuje moim Rodzicom, Elzbiecie i Stanislawowi Muszynskim, i mojemu Bratu, Wlodkowi.

Abstract

Dual core-and-symptom mental representation of the concept of aggression is postulated. The conceptual core is believed to consist of classical defining attributes, intent to harm and norm violation, which are necessary and sufficient criteria to select all and only positive instances of the category. Symptom or identification schema, consisting of aggressive actions, verbalizations, emotions, and other elements, is believed to be highly correlated with the category but may be irrelevant to the definition. These findings may enable us to relate on a theoretical level the traditional view on aggression to the contemporary knowledge about categorization. Some implications of the prototype approach to studying dynamic changes that unfold over time in a sequence of aggressive events are discussed.

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I. Introduction

There have been many attempts to define the concept of aggression (Tedeschi, 1984 for review). The problem with capturing the essence of aggressive acts is that their various antecedents, consequences, and forms must be taken into account. Although on a descriptive level, aggressive acts involve actual or potential delivery of harm, in order to exclude accidental or inadvertant harm, it is necessary to take into account the goal of a harmdoer and legitimacy of an act. Therefore, a definiton of aggression should accomodate not only perception of harm but also attributions of causality and judgments of appropriateness of an act.

For about the last ten years, an attributional definition of aggression (Feshbach, 1971; Rule, 1974) has been entertained by a several researchers. Within the attributional approach, it is assumed that aggressive acts differ with respect to the degree of personal causation and a set of norms that have been violated (Ferguson and Rule, 1983). Thus, in malevolently intended acts, harm is a result of an intentional violation of the norm of respect for an individual's welfare. In nonmalevolently intended acts, harm is caused by an intentional act which is motivated by the desire to achieve a nonharmful end. Accidentally harmful acts are by definition not intended and not antinormative because an actor had no control over behavior that led to the delivery of harm.

According to the Rule and Ferguson (1984) and Ferguson and Rule (1983) causal attribution model, an observer makes evaluations of an actor's behavior that *might* lead to labeling an act as aggressive in a course of a series of judgments. First, the observer attempts to discern whether the act was intended or unintended. Several conditions enhance the judgment of intentionality: malevevolent motive, forseeability of harm, and controllability of behavior.

An observer tends to view and act as unintended when there was a nonmalevolent motive for engaging in a harmful behavior. If harm was unintended, then an observer attempts to discern whether harm was forseeaable or unforseeable. If an inference about an actor's freedom to engage in a harmful act is made, the act is judged as forseeable. On the contrary, if an inference about uncontrollable forces interfering with an actor's ability to foresee the outcome are made, and act is judged as accidental.

However, the attributional approach to aggression has generated a controversy over the adequacy of the attributional definition of aggression. Some researchers have argued that attributional features, intent to harm and norm violation , by virtue of referring to inferential and moral judgment processes, preclude one from specifying a priori definitional criteria: definitions of observers may vary (Rule, 1974) and a lay person's and a theorist's definitions may differ (Tedeschi, 1984).

The argument of little predictive value of the attributional criteria is challenged by evidence in the attributional and moral judgment literature. In several aggression studies that employed the classical social paradigm (Buss, 1961; Berkowitz, 1969) it has been found that observers' evaluations and reactions to harmful behavior were consistently affected by perceived causal responsibility for the act and violation of a relevant set of norms. Acts were evaluated as more wrong and blameworthy when inferences about intent to harm and norm violation were made (Rule and Ferguson, 1984; Ferguson and Rule, 1983; Harvey and Rule, 1978; Rule and Nesdale, 1976; Nesdale, Rule, and McAra, 1975; Rule and Duker, 1973). It should be emphasized that in these studies conscious labeling of an act as aggressive was not investigated. Instead, it was assumed that evaluations of an act as wrong and deserving of blame were indications of aggressiveness.

Although it is agreed that antecedents of a harmful act, intent to harm and norm violation, affect perceived aggressiveness, knowledge about their effects jointly with mild versus severe harm is controversial. In some studies, varying the severity of harm produced no effect on adults' judgment of aggressiveness (e.g., Nesdale, Rule, and McAra, 1975). In other studies, however, effects of harm severity were found but their explanation for the result is not clear. According to Ferguson and Rule (1983), the effects of harm severity may be restricted to harmful behaviors that

involve some element of control. For example, blame ascription may be higher for forseeable as opposed to accidental acts that resulted in severe rather than mild harm.

According to Mummendey, Linneweber, and Loschper (1984), if there is little indication of either malevolent intent or norm violation or both, an act is evaluated as nonaggressive when it resulted in mild harm. On the contrary, when the act resulted in severe harm, either of the criteria suffices for the act to be evaluated as aggressive.

The attributional approach to defining aggression is consistent with assumptions of the traditional view on categorization. Within that approach it is assumed that a strict set of defining features is the basis for categorization. Consequently, Mummendey et al (1984) argued that "clearly innapropriate and intentionally harmful acts represent necessary and sufficient conditions for evaluating them as aggressive and sanctionable, irrespective of the amount of the factual harm consequences" (page 77). Similarly, Gergen (1984) has analyzed the meaning of the concept in the psychological literature and specified a strict set of criteria that sort aggressive from nonaggressive behaviors. Within this framework, a category membership is all-or-none. An instance possesing both attributes is identified as aggressive; an instance missing at least one of the attributes is identified as not

aggressive.

Although the value of the attributional criteria has been well demonstrated within the classical social paradigm, we thought that there might be an additional advantage to study the concept of aggression in a context of a contemporary approach to categorization (Rosch, 1975; Rosch and Mervis, 1975). Within this approach it is believed that knowledge of complex categories is better represented by prototypes rather than strict defining criteria. In the light of the some recent results, there exists another alternative of a dual representation of abstract well-defined concepts (Armstrong, Gleitman, and Gleitman, 1983; Landau, 1983). This may be especially pertinent to event concepts (Smith and Medin, 1984). Smith et al hypothesized that the meaning of some action concepts may be decomposed into components which may function as defining criteria. Although the authors cited no experimental evidence, this hypothesis is consistent with Gergen's (1984) analysis of the concept of aggression.

Accordingly, within this approach, it is assumed that membership in a category is a matter of degree. A category is composed of a prototype and a family of instances that bear different degrees of resemblance to the prototype (Rosch and Mervis, 1975). Instances that contain most of the features of the prototype represent typical cases; instances that contain few features of the prototype represent atypical cases. Within this approach, coherence of

categories is retained without restricting their scope. Thus, the structure that holds a category together is provided by a cluster of co-occuring attributes rather than by a restrictive all-or-none inclusion criteria.

Prototypicality effects have been demonstrated for natural and semantic categories (Rosch, 1975; Rosch & Mervis, 1975; Rosch, 1978; Mervis, 1980; Mervis & Rosch, 1981). Support was also obtained from psychiatric classifications (Cantor, Smith, French, & Mezzich, 1980), personality dimensions (Cantor & Mischel, 1979), linguistic labels of lying (Coleman & Kay), and emotions (Fehr and Russell, 1984).

There has also been preliminary work that extends the prototype view directly to the concept of aggression (Dobbs & Rule, 1984). Dobbs and Rule used the Rosch and Mervis (1975) paradigm to examine typicality effects for four categories (weapons, emotions, verbalizations, and actions) under four conditions: aggression, followed by aggression after a car accident that resulted in mild vehicle damage, severe vehicale damage, or severe personal harm to the passanger. Several findings were consistent with assumptions made within the prototype approach. First, subjects made consistent judgments about typicality of the instances of four categories: weapons, emotions, verbalizations, and actions, illustrating the shared structure of a category (Rosch, 1975).

Second, ratings of typicality were contingent upon experimental conditions: mild damage, severe damage, and severe personal harm, documenting the heterogenous nature of a category (Rosch & Mervis, 1975).

Third, mild and severe damage conditions shared typical emotions but not weapons and verbalizations, showing that overlap among features and parts determines membership in the category (Mervis & Rosch, 1981). Accordingly, severe harm, mild damage, and severe damage conditions shared weapons and verbalizations, but not emotions.

In spite of the well documented robustness and reliability of prototypicality effects, some recent findings posed problems for the Rosch et al (1975) theory. Armstrong, Gleitman and Gleitman (1983) and Landau (1982) elicited graded responses to well-defined categories by means of the Rosch et al (1975) paradigm. As a result, they postulated a dual core-and-symptom theory of mental representation. In their view, prototypicality effects pertain to a mentally stored indentification schema rather than to a category structure. A prototype constitutes a rough-and-ready list of perceptual and functional features that is only loosely associated with a category membership. Its cognitive function rests on a quick selection of potential members of a category. The ultimate categorization, however, is made on the basis of defining, usually inferential, attributes that are tightly related to a category membership.

Because of the great scope and diversity of the category of aggression, we felt that it might be advantageous to explore people's knowledge about the structure and content of the category of aggression within a cognitive paradigm (Rosch and Mervis, 1975; Coleman and Kay, 1981). Our purpose was to find out whether aggression as other natural language categories is a fuzzy concept, internally structured by a gradient of representativeness. Gradient of representativeness was operationally defined as people's ratings of how well an instance fits their idea or image of a category name. From consistency between people's ratings, we expected that some instances of the category were more typical than others.

Our study consisted of two parts using two distinct paradigms. In Part 1, we employed the Coleman and Kay (1981) paradigm. The purpose of this part was fourfold. First, our major goal was to examine whether differences in typicality ratings of scenarios depicting hostile, prosocial, and accidental aggression were consistent with the classical definition of aggression or with a prototypic view on categorization. The discrimination among these three types of aggression was analogous to the Ferguson and Rule (1983) classification of aggressive acts into malevolently intended, nonmalevolently intended, and accidental. Accordingly, hostile aggression was represented by two criterial attributes (malevolent intent and norm violaton), prosocial aggression was defined by one criterial attribute

(nonmalevolent intent), and finally accidental aggression did not possess either of the criterial attributes.

We hypothesized that, if the classical view is correct, scenarios that possess the two criterion attributes would be rated as typical of aggression; scenarios that lack either one or two attributes would be rated as atypical. If the prototypical view is correct, prototypicality effects would be determined by the number of defining attributes present in the scenarios. Episodes that possess two attributes would be rated as most typical, episodes that possess one attribute would be rated as intermediate, and episodes that possess no criterial attribute would be rated as least typical. In addition, high severity of harm would not contribute to increased ratings of typicality in either type of aggression (Mummendey et al, 1984).

Second, we attempted to determine whether the relative importance of theoretical constructs: intent to harm, justification, forseeability, control, and outcome severity in the participants ratings of typicality, aggressiveness, and blameworthiness were consistent with the Rule and Ferguson (1984) and Ferguson and Rule (1983) model. The authors made predictions specifically for evaluations of an act as wrong and deserving of blame which were conceptualized as indications of aggressiveness. We attempted to extend these predictions to the conscious labeling of an act as aggressive and typical in order to study basic processes involved in categorization.

Consequently, we expected that malevolent intent and low justification would be most highly associated with hostile aggression. Forseeability and high justification would be associated with prosocial aggression because nonmalevolent rather than malevolent motive for engaging in behavior is inferred. And finally, a low level of control would be most associated with accidental aggression because inferences about uncontrollable forces interfering with an actor's ability to foresee a harmful outcome would be made.

Third, we examined the relationship between the concepts of aggressiveness and typicality of an aggressive act. There was no a priori basis for predicting whether or not the concepts are isomorphic or even highly associated. We reasoned that, providing the coexistence of both representations in memory, we should observe their distinct cognitive functions. Because in attribution theory people evaluate a harmful act for the purpose of selecting an appropriate response to it (e.g., ascribing blame) we expected that the degree of relationship between ratings of typicality and blameworthiness and ratings of aggressiveness and blameworthiness would reveal the importance of both concepts for blame ascription.

Fourth, we examined the relationship between the concepts of aggressiveness and blameworthiness. The purpose was to find out whether the concept of blameworthiness and aggressiveness are isomorphic. Ferguson and Rule (1983) assumed that blameworthiness can be conceptualized as an

index of aggressiveness, however this hypothesis has not been explicitly tested.

In Part II, we employed the Rosch et al (1975) paradigm. The purpose of this part was to examine whether typicality ratings of instances of actions, verbalizations, and emotions were contingent upon the three types of aggression. We expected that ratings of typicality of aggressive words are context dependent. This has been demonstrated previously by Dobbs and Rule (1984). Dobbs and Rule found shifts in typicality ratings of weapons, emotions, verbalizations, and actions that were contingent upon experimental conditions defined by mild or severe damage to the car, or severe harm to a person. Although the setting conditions in their study were defined by the mode and severity of outcome, we expected that similar results would be obtained for settings that were attributionally defined.

Accordingly, we expected that words that were most typical of hostile aggression would be less typical of prosocial and least typical of accidental aggression. On the contrary, words that were least typical of hostile aggression would be more typical of prosocial aggression and most typical of accidental aggression.

II. Method

A. Participants

Fifty seven introductory psychology students, 34 male and 23 female native speakers of English, completed a questionnaire as an option for a laboratory course requirement. They were tested in groups ranging in size from 5 to 11.

B. Materials

In Part 1, twelve scenarios were used, four scenarios describing each of hostile, prosocial, and accidental aggression. Each of the four scenarios depicted one of two themes (jogging or shopping) and one of two outcome severities (mild or severe). The four scenarios were presented in three random orders. Scenarios are presented below.

Scenerios

Hostile Condition

(mild outcome) Mark and his wife, Jean, were jogging through a park. Mark went crushing into Jean because he was angry at her. Jean fell and scratched her forearm.

(severe outcome) Mark and his wife, Jean, were jogging through a park. Mark went crushing into Jean because he was angry at her. Jean fell and fractured her forearm.

(mild outcome) Mark and his wife, Jean, were doing their weekly shopping. Mark dropped a bag of groceries on Jean's foot because he was angry at her. Jean's foot was

bruised for a few days.

(severe outcome) Mark and his wife, Jean, were doing their weekly shopping. Mark dropped a bag of groceries of Jean's foot because he was angry at her. Jean's foot was broken.

Prosocial Condition

(mild outcome) Mark and his wife, Jean, were jogging through a park. Mark went crushing into Jean when he reached over to pick up a sharp piece of glass that someone had just tossed into the grass in front of Jean. Jean fell and scratched her forearm.

(severe outcome) Mark and his wife, Jean, were jogging through a park. Mark went crushing into Jean when he reached over to pick up a sharp piece of glass that someone had just tossed into the grass in front of Jean. Jean fell and fractured her forearm.

(mild outcome) Mark and his wife, Jean, were doing their weekly shopping. Mark dropped a bag of groceries on Jean's foot when he threw his arms out to push Jean out of the way of oncoming shopping cart. Jean's foot was bruised for a few days.

(severe outcome) Mark and his wife, Jean, were doing their weekly shopping. Mark dropped a bag of groceries on Jean's foot when he threw his arms out to push Jean out of the way of oncoming shopping cart. Jean's foot was broken.

Accidental Conditon

(mild outcome) Mark and his wife, Jean, were jogging through a park. Mark went crushing into Jean when he tripped as he was running. Jean fell and scratched her forearm.

(severe outcome) Mark and his wife, Jean, were jogging through a park. Mark went crushing into Jean when he tripped as he was running. Jean fell and fructured her forearm.

(mild outcome) Mark and his wife, Jean, were doing their weekly shopping. Mark dropped a bag of groceries on

Jean's foot when he suddenly got a cramp in his shoulder. Jean's foot was bruised for a few days.

(severe outcome) Mark and his wife, Jean, were doing their weekly shopping. Mark dropped a bag of groceries on Jean's foot when he suddenly got a cramp in his shoulder. Jean's foot was broken.

In Part 11, 19 instances of actions, 22 instances of verbalizations, and 25 instances of emotions were used. The instances were generated by 28 social psychology students who were asked to list words that are most typical of a husband-wife dispute when the husband either wants to hurt his wife or his goal is bring about a good end for her, or a husband-wife dispute that followed a car accident. Later, 18 introductory psychology students rated the typicality of these words in the three above described contexts. On the basis of these ratings, a number of instances that obtained very low typicality ratings and have been judged as discrepant from the other items were removed from the list. The final list, presented in Table 1, was used in our study.

C. Procedure

The participants were told that the purpose of the study was to find out what ideas people have about aggression, in particular what people think is a good or poor example of aggression. It was explained that the study had two parts. In Part 1, the task was to read four scenarios and answer a number of questions about each story by circling appropriate numbers on 7-point scales. The

Table 1

List of Actions, Verbalizations, and Emotions

Physical Actions	Verbalizations	Emotions
1. spank	20. demean	42. fear
2. poke	21. quarrell	43. resentment
3. shove	22. disparage	44. hostility
4. punch	23. harass	45. remorse
5. push	24. shout	46. irritation
6. cut	25. scream	47. anger
7. bite	26. threaten	48. upset
8. slap	27. ridicule	49. embarassment
9. kick	28. annoy	50. shame
10. bump	29. bother	51. rage
11. hit	30. argue	52. fury
12. scratch	31. blame	53. impatience
13. restrict	32. tease	54. displeasure
14. punish	33. tattle	55. annoyance
15. throw things	34. accuse	56. contempt
16. trip	35. force	57. jealousy
17. grab	36. scandalize	58. surprise
18. stab	37. curse	59. sadness
19. gouge	38. scold	60. depression
	39. insult	61. jumpiness
	40. coerce	62. indignation
	41. yell	63. disappointment
		64. tenseness
		65. shocked
		66. anxiety

questions appeared in two different orders. In our pilot study we used four random orders, however we did not find an order effect. Therefore, order was not varied in the main study. The participants answered the questions listed in Table 2.

In Part II, the task was to rate on 7-point scales how typical of a given type of aggression were instances of actions, verbalizations, and emotions. Instructions are presented below.

Table 2

Questionnaire

1.How much did Mark want to hurt Jean?
Very Much 7 6 5 4 3 2 1 Not At All
2.How justified was Mark in hurting Jean?
Very Justified 7 6 5 4 3 2 1 Not Justified At All
3.How much control did Mark have over his behavior?
Complete Control 7 6 5 4 3 2 1 No Control
4.Could Mark predict that he might hurt Jean?
Could Predict 7 6 5 4 3 2 1 Could Not Predict At All
5.How severe were the consequences for Jean?
Very Severe 7 6 5 4 3 2 1 Not At All Severe
6.How sure are you that other people would agree with your typicality judgment?
Very Sure 7 6 5 4 3 2 1 Not At All Sure
7.How plausible is the story?
Very plausible 7 6 5 4 3 2 1 Not At All Plausible
8.How likely is it that this type of event would occur real life?
Very Likely 7 6 5 4 3 2 1 Not At All Likely
9.How much should Mark be blamed for his actions?
Should Be Blamed Completely 7 6 5 4 3 2 1 Should Not Be Blamed At All
10.To what extent was Mark's behavior
Appropriate 7 6 5 4 3 2 1 Not At All Appropriate
Aggressive 7 6 5 4 3 2 1 Not At All Aggressive
Careless 7 6 5 4 3 2 1 Not At All Careless
11.Was Mark's behavior a good or poor example of aggression?
Very Good Example 7 6 5 4 3 2 1 Very Poor Example

Note: The original order of the questions was changed for the convenience of a reader.

Instructions

This study has to do with what we have in mind when we use words which refer to categories. Let's take the word red as an example. Imagine a true red. Now imagine an orangish red . Imagine a purple-red. Although you might still name the orange-red or the purple-red with the term red, they are not as good examples of red (as clear cases of what red refers to) as the clear "true" red. Orange and purple are even poorer examples of "red", perhaps not even red at all. Notice that to judge how good an example something is has nothing to do with how well you like the thing: you can like a purple-red better than a true red but still recognize which is the better example of "red".

The category we are interested in is aggression. We are interested in which types of aggression are good or poor examples of aggression and which actions, verbalizations, and emotions are good or poor examples of a particular type of aggression.

The instructions were followed by a description of one of the three types of aggression and explanation of a 7-point scale. It was stressed that we expected people to give us their opinion about the typicality of items without worrying about whether just they or people in general felt that way.

The following statements described, in order, hostile, prosocial, and accidental aggression:

1.An aggressive incident beteen husband and wife when the husband is angry and wants to hurt his wife.
2.An aggressive incident between husband and wife when the husband wants to help his wife but in order to achieve this he hurts her.
3.An aggressive incident between husband and wife when the husband accidentaly hurts his wife.

After the instructions were given, the participants were randomly assigned to the hostile, prosocial, and accidental conditions. When the tasks were completed, the participants were debriefed and thanked for their cooperation.

III. Results

Part 1

The effects of type of aggression and outcome severity were determined by a 3 (type of aggression) X 2 (sex of the participants) X 2 (theme) X 2 (outcome severity) mixed factorial analysis of variance conducted for several variables. Significant differences between means were determined by the Neuman-Keuls test at probabilty level alpha less than .05.

The relative importance of the variables on ratings of aggressiveness, typicality, and blameworthiness for each type of aggression was determined by a stepwise multiple regression analysis. The proportion of variance accounted for by a complete set of variables was computed as a result of a forced entry of the variables which failed to meet the standard stepwise selection criteria. The statistics for these variables are presented in one block.

The direction and strength of association between the ratings of typicality and aggressiveness and between blameworthiness and aggressiveness for each type of aggression was determined by a regression analysis. The relative importance of typicality and aggressiveness in ratings of blameworthiness in each type of aggression was determined by a stepwise regression analysis. Only significant results are reported for each type of analysis.

A. Type of Aggression Manipulation Check

To ensure that manipulations were effective, an analysis of variance was conducted for each independent variable. The variables addressed in attribution theory were: malevolent intent measured by the question about intent to harm; justification, measured by the questions about justification and appropriatness; forseeability, measured by the questions about predictability and carelessness; control, and finally, severity of harm. In additon, confidence of typicality ratings, plausibility, and likelihood of occurence of the scenarios in real life were measured. The effects of type of aggression for all variables except harm severity were effective in the predicted direction (See Table 3 for the mean ratings of the variables). Unexpectedly, a harmful outcome was perceived as more severe in the hostile aggression condition than in the prosocial and accidental conditions. Consistent with our predictions, there was an absence of a main effect of the type of aggression on the participants' confidence of typicality ratings. Table 4 presents the summary analysis of variance results.

The main effects of condition on ratings of intent, confidence of typicality, and likelihood of occurrence of scenarios in real life were modified by sex of the participants. The effect of condition on ratings of carelessness was modified by sex of the participants and a story theme. As is shown in Tables 1-4 of Appendix A,

Table 3

Mean Ratings of Independent Variables as a Function of Aggression Type

Variable	Condition		
	Hostile	Prosocial	Accidental
Intent to Harm	4.88[a]	1.36[b]	1.72[b]
Justification	1.90[a]	3.52[b]	2.90[ab]
Control	5.32[b]	4.65[a]	2.76[b]
Predictability	5.29[a]	3.44[a]	2.72[b]
Severity of Harm	5.19[a]	3.88[ab]	4.21[b]
Carelessness	5.67[a]	4.21[b]	4.67[ab]
Appropriatness	1.74[b]	4.46[a]	3.71[a]
Plausibility	4.22[a]	4.26[a]	5.25[a]
Occurence in Life	4.18[b]	3.92[b]	5.18[a]
Confidence of Typicality	5.31	5.50	5.28

Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher means indicate higher ratings of each variable.

although there were differences between sexes in the mean ratings of the variables, these results only show that the manipulations were sometimes more effective for female than for male. These results have no theoretical significance, therefore they will not be further discussed.

In addition, there were main effects of sex and theme factors on ratings of some variables, modified by the other factors. However, as is shown in Tables 5-13 of Appendix A, there were either no differences between means by

Neuman-Keuls or the differences were not theoretically meaningful. Therefore, these results will not be further discussed.

B. Severity of Outcome Manipulation Check

As seen in Table 5 and 6, there was a main effect of the outcome severity factor on the measure of severity of harm. Interestingly, the outcome severity factor also had an effect on ratings of several other variables. In the scenarios that depicted a severe compared to a mild outcome, harm was perceived as more typical and blameworthy. In addition, the participants inferred greater malevolent intent and carelessness from the scenarios with severe outcome than from scenarios with mild outcome. On the contrary, scenarios with a mild outcome resulted in attribution of more justification, plausibility, and likelihood of occurrence in real life. The results are presented in Tables 5 and 6. Tables 5 and 6 present also main effects of harm severity on ratings of typicality and blameworthiness, however these results will be disscussed later.

C. Type of Aggression and Severity of Harm Effects on Ratings of Typicality, Aggressiveness, and Blameworthiness

The ratings of typicality were consistent with the classical definition of aggression. There was a main effect

Table 4

Coefficients for Variables as a Function of Aggression Type

Variable	F	MS error	p
Intent to Harm	84.60	3.41	.001
Justification	4.90	11.69	.01
Control	12.71	10.96	.001
Predictability	16.65	8.15	.001
Severity of Harm	10.19	3.19	.001
Carelessness	4.26	9.59	.02
Appropriatness	22.63	6.06	.001
Plausibility	3.69	6.99	.03
Occurence in Life	4.82	8.05	.01
Confidence of Typicality	.04	6.24	ns

Degrees of freedom for all Fs were 2 and 51.

Table 5

Coefficients for Variables as a Function of Outcome Severity

Variable	F	MS error	p
Severity of Harm	437.90	1.04	.001
Intent	5.09	.39	.03
Justification	7.64	1.04	.01
Carelessness	12.35	.65	.001
Plausibility	10.20	1.37	.002
Ocurrence in Life	27.83	.74	.001
Typicality	15.79	.46	.001
Blameworthiness	9.33	.59	.004

Degrees of freedom for all Fs were 1 and 51.

Table 6

Mean Ratings of Variables as a Function Outcome Severity

Variable	Outcome	
	Severe	Mild
Severity of Harm	5.84	2.96
Intent	2.69	2.49
Justification	2.60	3.00
Carelessness	5.01	4.64
Plausibility	4.32	4.83
Ocurrence in Life	4.12	4.73
Typicality	3.13	2.78
Blameworthiness	4.32	3.89

Degrees of freedom for all Fs were1 and 51. Higher numbers indicate higher ratings of the variable.

of condition, with the mean ratings in the hostile condition higher than those in the prosocial and accidental conditions. There was no difference between the latter two conditions. The pattern of results was similar for the ratings of aggressiveness and blameworthiness (see Tables 7 and 8 for the effects of type of aggression on the ratings of dependent variables).

Consistent with Mummendey et al (1984) but inconsistent with Ferguson and Rule (1983), there was no interaction of a type of aggression factor with the harm severity factor for any of the theoretical variables. As is shown in Table 5, there was a main effect of outcome severity on ratings of typicality and blameworthiness. As indicated in Table 6, a

Table 7

Coefficients for Variables as a Function of Aggression Type

Variable	F	MS error	p
Typicality	56.77	4.96	.001
Aggressiveness	46.71	7.00	.001
Blameworthiness	30.77	8.01	.001

Degrees of freedom for all Fs were 1 and 51.

Table 8

Mean Ratings of Variables as a Function of Aggression Type

Variable	Condition		
	Hostile	Prosocial	Accidental
Typicality	5.26 a	1.88 b	1.91 b
Aggressiveness	6.00 a	2.65 b	2.17 b
Blameworthiness	6.26 a	3.46 b	2.87 b

Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of each dependent variable. The mean ratings of the variables as a function of Condition X Sex X Theme X Outcome interaction are presented in Tables 14-16 of Appendix A.

severe outcome was rated as more typical and blameworthy than mild. There was no main effect of harm severity on ratings of aggressiveness.

There was an unexpected Sex X Theme interaction for blameworthiness ratings and Theme X Outcome Severity

interaction for aggressiveness ratings (see Tables 17-18 in Appendix A for mean ratings of variables). Because these results have no influence on our interpretation, they will not be discussed further.

D. Relationship of Aggressiveness with Typicality and Blameworthiness

The relationship between the concepts of aggressiveness and typicality and aggressiveness and blameworthiness was assessed indirectly by observing the pattern of the analyses of variance results for both variables and directly by measuring the degree of association between the ratings obtained for each pair of variables. As is shown in Table 8, analyses of variance resulted in a similar pattern of ratings of aggressiveness, typicality, and blameworthiness for the three conditions. Another indirect way of assessing the relationship between the concepts was the determination of the relative importance of variables on ratings of aggressiveness and typicality. Stepwise multiple regression analyses were initially performed separately for scenarios with a severe outcome and scenarios with a mild outcome. Because harm severity had no effect on the results, the data for both types of outcome were combined and harm severity factor was removed from further analysis.

A multiple regression analysis averaged over harm severity showed that the same independent variables significantly predicted both typicality and aggressiveness:

intent in the hostile, forseeability in prosocial, and control in the accidental condition. Interestingly, intent accounted for a greater proportion of variance in the aggressiveness rating (RSqare=.40) than in the typicality rating (RSquare=.28) in the hostile aggression condition (see Table 9 and 10 for the results of a regression analysis). The results obtained for aggressiveness are consistent with the Ferguson and Rule (1983) and Rule and Ferguson (1984) model. Ratings of aggressiveness were best predicted by the ratings of malevolent intent, predictability, and control in the hostile, prosocial, and accidental aggression conditions respectively.

Inconsistent with the Ferguson and Rule (1983) model, a regression analysis revealed that the concepts of aggressiveness and blameworthiness are not isomorphic in a sense that dimensions that contributed to both types of ratings were weighted differently in the hostile aggression condition. As is seen in Table 11, blameworthiness ratings were best predicted by a forseeability (as indicated by a predictability measure) rather than an intentionality dimension. Similarly to the ratings of aggressiveness, ratings of blameworthiness were best predicted by forseeability (as indicated by a carelessness measure) and control in the prosocial and accidental conditions respectively.

Table 9

RSquares for Variables Correlated with Aggressiveness

Step	Condition	RSQ	df	F	MSerror	p	p(Change)	
	Hostile							
1	Intent	.40	1,16	10.79	7.24	.005		
2	Block	.71	6,11	4.40	5.18	.02		ns
	Prosocial							
1	Predict	.32	1,18	8.39	36.04	.01		
2	Block	.44	6,13	1.71	40.91	ns		ns
	Accidental							
1	Control	.63	1,17	28.88	7.94	.000		
2	Intent	.82	2,16	36.05	4.13	.000		.000
3	Justificition	.88	3,15	37.43	2.86	.000		.01
4	Block	.90	6,12	17.15	3.17	.000		.000

Table 10

RSquares for Variables Correlated with Typicality

Step	Condition	RSQ	df	F	MSerror	p	p(Change)	
	Hostile							
1	Intent	.28	1,16	6.36	26.69	.02		
2	Block	.60	6,11	2.75	21.68	ns		ns
	Prosocial							
1	Predict	.32	1,18	8.34	13.25	.01		
2	Block	.39	6,13	1.32	16.36	ns		ns
	Accidental							
1	Control	.67	1,17	34.82	3.83	.000		
2	Block	.79	6,12	7.49	3.48	.002		ns

Tables 9-11 present also proportions of the remaining variance (RSquare Change) accounted for as new variables were entered into the analysis. RSquare Change can be computed by subtracting proportion of variance accounted for (RSQ) on a higher step from the proportion of variance accounted for on a lower step of analysis. For example,

RSqare Change in the hostile aggression condition (Table 11) is .79-.66=.13. The tables present also the total proportion of variance accounted for by a complete set of variables (Block).

In addition, we report proportions of a unique contribution of each theoretical variable (i.e., tolerance) to the ratings of aggressiveness, typicality, and blameworthiness. Interestingly, intent had the highest tolerance with other independent variables in both the hostile and prosocial conditions. Justification and appropriatness had the highest tolerance in the accidental condition (see Table 12 for proportions of unique contributions of variables to ratings of aggresssiveness, typicality, and blameworthiness).

A regression of aggressiveness on the typicality measure revealed that aggressiveness was less strongly associated with typicality in the hostile aggression condition (RSquare=.49) than in the prosocial (RSqare=.70) and accidental condition (RSqare=.77). See Table 13 for results of a regression analysis. Also, as seen in Table 14, the correlations between the ratings of blameworthiness and typicality were low in the hostile (RSquare=.32) and accidental (RSquare=.30) conditions. Overall, the results indicate that the concepts of typicality, aggressiveness, and blameworthiness were not isomorphic in the hostile aggression condition.

Table 11

RSquares for Variables Correlated with Blame

Step	Condition	RSQ	df	F	MSerror	p	p(Change)
	Hostile						
1	Predict	.66	1,16	30.82	5.79	.000	
2	Block	.79	6,11	6.99	5.12	.003	ns
	Prosocial						
1	Careless	.55	1,18	22.41	23.82	.000	
2	Block	.78	6,13	7.62	16.38	.001	ns
	Accidental						
1	Control	.61	1,17	26.72	11.32	.000	
2	Block	.84	6,12	10.21	6.75	.000	.04

Table 12

Proportions of Unique Contributions of Independent Variables to Ratings of Aggressiveness.

Variable	Condition		
	Hostile	Prosocial	Accidental
Intent	.72	.63	.40
Control	.26	.31	.32
Predictability	.18	.23	.23
Carelessness	.15	.18	.62
Justification	.12	.42	.79
Appropriatness	.07	.30	.86

Note:
Tolerance coefficients for ratings of typicality and blameworthiness for the three conditions were exactly the same.

Table 13

Analysis of Variance for Correlations of Typicality and Aggressiveness

Condition		df	F	MSerror	p
Hostile	RSQ=.49	1, 16	15.57	6.14	.001
Prosocial	RSQ=.70	1, 18	43.18	15.54	.000
Accidental	RSQ=.77	1, 17	56.77	4.94	.000

Table 14

Analysis of Variance for Correlations of Aggressiveness and Blameworthiness

Condition		df	F	MSerror	p
Hostile	RSQ=.32	1, 16	7.58	11.49	.01
Prosocial	RSQ=.30	1, 18	7.82	33.69	.00
Accidental	RSQ=.66	1, 17	32.46	8.86	.000

A stepwise regression of the aggressiveness and typicality measures on the blameworhiness measure was conducted for each type of aggression separately. Blameworthiness was significantly predicted from the aggressiveness measure in the hostile aggression condition, but it was significantly predicted by the typicality measure in the prosocial and accidental conditions (see Table 15 for the results of the regression analysis). The results support the notion of different effects of aggressiveness and typicality in the hostile aggression condition.

Part 11

In this part, the effects of type of aggression on shifts in typicality ratings of instances of actions, verbalizations, and emotions were determined. Three instances of each type of words that were rated as most typical and three instances that were rated as least typical were chosen from the hostile aggression condition. The choice of the number of the highest and lowest typicality words was arbitrary. We felt that selecting more than one

Table 15

RSquers for Variables Correlated with Blame

Condition	RSQ	df	F	MSerror	p
Hostile: Aggressiveness	.32	1,16	7.58	11.49	.01
Prosocial: Typicality	.37	1,18	10.57	33.70	.004
Accidental: Typicality	.70	1,17	38.85	8.86	.000

item for analysis would increase the reliability of the results. (It should be emphasized that similar results were obtained when the five highest and lowest typicality words were selected for the analysis). A 3 (type of aggression) X 2 (typicality) X 3 (word type) mixed factorial analysis of variance was performed on mean ratings of high and low typicality words. (see Table 16 for mean ratings of the highest and lowest typicality words).

There was a main effect of typicality factor. Typical items were rated significantly higher than nontypical (see Table 1 in Appendix B for mean ratings of typicality). There was also a main effect of type of aggression on typicality ratings. However, the Neuman-Keuls test did not show differences between typicality ratings in the three types of aggression. (see Table 2 in Appendix B for mean ratings of variables). There was an unexpected Type of Aggression X Typicality interaction. Thus, we observed a shift in typicality ratings for the prosocial condition for the high typicality items. The ratings in the accidental condition did not change. Stated somewhat differently, high typicality

Table 16

Mean Ratings of the Most and Least Typical Words

Word Type	Typicality			
	Highest	M	Lowest	M
Actions	cut	6.06	grab	4.65
	shove	5.50	spank	4.50
	slap	5.44	bump	4.35
Verbalizations	threaten	5.67	tease	3.89
	demean	5.39	accuse	3.65
	yell	5.33	quarrell	3.65
Emotions	anger	4.78	depression	1.87
	irritation	4.72	annoyance	1.82
	hostility	3.94	impatience	1.82

items were rated as less typical in the prosocial condition than in the hostile condition but there was no difference between typicality ratings in the hostile and accidental conditions (see Table 2 in Appendix B for the mean ratings of words). The analysis of variance showed a main effect of a word type factor on ratings of typicality, however the Neuman-Keuls test did not show any differences (see Table 4 in Appendix B for mean ratings of typicality for actions, emotions, and verbalizations).

The Spearman-Brown interclass correlation coefficient for ratings of words that were selected for an analysis of variance was .78. This is additional evidence that the words were rated similarly in the three types of aggression conditions.

Split-half correlations were computed for all 66 words for each type of aggression seperately. The coefficient

approached an acceptable level only in the hostile condition. This measure of interitem reliability indicates that the instances reliably measure the concept of hostile aggression. See Table 17 for split-half correlation coefficients.

Table 17

Split-Half Correlations as a Function of Aggression Type

Condition	Correlation	p
Hostile	.72	.000
Prosocial	.34	.003
Accidental	.43	.000

Correlations were performed on 66 cases.
Note: As is seen in Table 5 in Appendix B, split-half correlations performed separately for emotions, verbalizations, and emotions can not be interpreted because of the insufficient number of cases used for the analysis.

IV. Discussion

It appears that the results of the study are consistent with the classical definition of aggression. From the ratings of typicality, it seems that harmful acts characterized by malevolent intent and norm violation are clear members of the category of aggression, whereas acts that are lacking either or both of the criteria are perceived as borderline instances. Although the mean ratings of typicality for the prosocial ($\underline{M}$=1.88) and accidental ($\underline{M}$ =1.91) conditions were higher than 1 (i.e., a number on a 7-point scale which indicated a very poor example of aggression) this elevation of means may be attributed to the participants use of the scale. It seems that people who rated typicality of prosocial and accidental aggression as higher than 1 tended to use the extreme numbers of the scale less often than people that rated typicality of both types of aggression as 1. Proportions of extreme responses (i.e., one or seven) to all questions of the questionnaire to the total number of responses are presented in Table 18 seperately for the participants who rated typicality of prosocial or accidental aggression as 1 and those who rated them as higher than 1.

Although, consistent with the Rosch et al (1975), we used a 7-point scale with extreme numbers indicating very good and very poor examples of aggression, in order to increase reliability of our findings, it would be beneficial to employ a dichotomous scale with one end of a scale

Table 18

Proportions of All Extreme Responses Obtained from Participants who Rated Typicality of Prosocial or Accidental Aggression as One or Higher

Condition			
Prosocial		Accidental	
Proportions for people who rated typicality as 1.			
One	Seven	One	Seven
.34	.14	.33	.11
Proportions for people who rated typicality as > 1.			
One	Seven	One	Seven
.10	.12	.15	.6

The frequency distributions of typicality responses are presented in Table 5 of Appendix B.

indicating nonmembership in a category.

Our study is also consistent with the prototype view on categorization. Although we did not obtain graded typicality responses for scenarios depicting hostile, prosocial, and accidental aggression, the participants found the task of rating typicality meaningful and they were confident about their typicality ratings. Similarly, they were able to consistently judge typicality of instances of aggressive actions, verbalizations, and emotions.

In accordance with the core-and-symptom view on categorization, (Armstrong, Gleitman, and Gleitman, 1983; Landau, 1982) it is possible that the concept of aggression is mentally represented by both a conceptual core and identification schema. In addition, there may be distinctive functions of aggressiveness and typicality concepts. In the literature, there are no specific predictions about what

constitutes distinctive properties of conceptual core and identification schema. Rosch et al (1975) argued that symptoms have imagelike properties, however this may not be valid for some abstract concepts. Armstrong et al (1983) argued that distinction between inferential versus imagelike properties of a core and symptom is fuzzy may vary across categories. Nevertheless, they claimed that a conceptual core does exist in some cases and is functionally different from symptoms by virtue of possessing a set of necessary and sufficient criteria to pick out all and only positive instances of a category. Symptoms, on the other hand, may represent features that are highly correlated with a category but may be irrelevant to its definition.

It seems that the concept of aggressiveness in our study was related more to a category membership than was related the concept of typicality. The aggressiveness ratings significantly predicted blameworhiness ratings only in the hostile aggression condition, which was nota bene rated as clearly aggressive. Moreover, the association between the aggressiveness and typicality was lower in the hostile aggression condition than in the prosocial and accidental conditions.

The concept of typicality, on the other hand, was probably related to identification schema. The ratings of typicality significantly predicted ratings of blameworthiness in the prosocial and accidental aggression conditions, which were rated as borderline instances of

aggression. From this, we can conclude that harmful consequences might cause the prosocial and accidental acts to be considered as likely candidates for inclusion in the category of aggression, however ultimately they are not included because they fail to meet the malevolent intent and norm violation defining criteria.

Support of this hypothesis comes from the participants ratings of aggressive instances of actions, verbalizations, and emotions. The participants consistently rated typicality of the instances regardless of the attributionally defined settings. This finding is not consistent with the Dobbs and Rule (1984) results. Perhaps, the discrepancy rests on a different nature of the tasks in the two studies. People in the Dobbs and Rule (1984) study were able to make discriminations between conditions on the basis of mode and severity of harm, however this task was not related to judgments of a category membership. On the contrary, in our study, people were required to make judgments about a category membership on the basis of proptotypic features. Because, as we demonstrated, such a decision can be made only on the basis of defining criteria, not suprisingly the participants could not do the task.

Our results concerning the contribution of variables of malevolent intent, forseeability, and control to the ratings of aggressiveness are consistent with the Ferguson and Rule (1983) and Rule and Ferguson (1984) causal attribution model. In our study, malevolent intent was a best single

predictor of aggressiveness in the hostile aggression condition, forseeability in the prosocial condition, and control in the accidental condition. This supports the idea that in making their causal attributions concerning a harmdoer, people attempt to ascertain, first, the presence or the absence of malevolent intent; second, if malevolent intent was absent, forseeability of harm; and finally, if the act was forseeable, controllability of behavior. Suprisingly, these variables were weighted differently in the ratings of blameworthiness in the hostile aggression condition. The dimension of forseeability rather than intentionality was a best predictor of blame ascription. which may indicate that aggressiveness and blame are different constructs.

In addition, consistent with the observations of Mummendey et al (1984), we found that severity of harm had no effect on ratings of aggressiveness. The authors argued that severe harm is a necessary criterion for evaluation of an act as aggressive only if there are low indications of either malevolent intent or norm violation or both. Accordingly, there was no effect of severe harm on ratings of aggressiveness in either prosocial or accidental aggression conditions. Both the absence of a main effect of harm severity on ratings of aggressiveness and the absence of a Harm Severity X Type of Aggression interaction are consistent with the hypothesis of no effect of harm severity when the information about malevolent intent and

justification information are available.

Interestingly, more severe harm was rated as more typical of aggression and deserving of more blame but there was no effect of harm on ratings of aggressiveness. Moreover, harm severity had an effect on ratings of several variables. Acts that resulted in severe harm elicited higher ratings of malevolent intent and carelessness (i.e., one of the measures of forseeability), and lower ratings of justification. Because there were no interactions with the type of aggression, these results do not support Ferguson and Rule (1983) hypothesis that severity influences judgments primarily when there is some element of control. Instead, a severe outcome directly affects the perception of forseeability and intent. Apparently, by doing so, attributions of blame are influenced.

Contrary to expectations, justification had a negligible effect on ratings of aggressiveness, even though the manipulation of this information was effective. One possible interpretation is consistent with the Ferguson and Rule (1983) hypothesis. The authors argued that in the attributional process, there is "a tendency to associate like motives with like outcomes- that is, to infer that malevolent rather than nonmalevolent reasons guided the intentional production of harm" (page 56). Support for this hypothesis was obtained from the Mummendey et al (1984) analysis of people's subjective interpretations of malevolent intent and norm violation. This analysis revealed

that, in general, the variation of one factor may influence the subjective interpretation of the other factor. In particular, people tend to assimilate intent or norm violation at respectively matching levels. For example, if malevolent intent is inferred, but behavior is only slightly inapropriate, people tend to interpret the low norm violation as high.

Because of our finding of the highest tolerance of intent in the hostile and prosocial aggression conditions, we reason that in combination with information about intent, information about norm violation may be redundant. In our study, a negative correlation of intent and appropriatness in the prosocial aggression condition ($r=-.54$, $p<.01$) may support this claim. However, further investigations are needed.

In conclusion, this study may have potential theoretical and methodological implications for studying aggression. First, it is possible that the concept of aggression is represented in memory by a conceptual core consisting of a malevolent intent and norm violation criteria and a prototype consisting of emotions, verbalizations, and actions. This finding would enable us to theoretically relate the traditional view on aggression to contemporary knowledge about categorization, and thus consider the category of aggression within a broader context of knowledge about natural language categories. The advantage of this approach rests on the fact that it

overcomes the shortcomings of the traditional social paradigm. As Rule and Ferguson (1984) argued, the traditional paradigm did not allow for studying dynamic changes that unfold over time in a sequence of aggressive events. Within the cognitive approach, it is possible to study how identification schema (or scripts) consisting of actions, verbalizations, emotions, and other elements change over time (Dobbs and Rule, in progress).

Because our research was preliminary, still some issues need to be clarified. First, our finding of what may be stored in memory should be further expanded to demonstration of relevance of the conceptul core and a prototype to different types of tasks in different age groups. We suggested that a prototype and a conceptual core may be relevant to two distinct decision steps, tentative and ultimate, involved in a categorization process. However, it is likely that other cognitive functions of the two representations may be identified. Specifically, it seems possible that a prototype, due to its primarily perceptual and functional nature, is learned first in a course of development, can be more readily accessed, is involved in selection of a response (e.g., blame ascription) to a harmful act, and finally, speeds up categorization process.

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VI. Appendix A

Table 1

Mean Ratings of Intent as a Function of Condition X Sex Interaction

Condition	Sex	
	Male	Female
Hostile	4.48 b	5.38 a
Prosocial	1.54 c	1.04 c
Accidental	1.89 c	1.50 c

F(1, 51)=3.22, MS error=3.41, p<.05. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 2

Mean Ratings of Confidence of Typicality as a Function of Condition X Sex Interaction

Condition	Sex	
	Male	Female
Hostile	4.95 ab	5.75 ab
Prosocial	5.59 ab	5.32 ab
Accidental	4.41 b	6.47 a

F(2, 51)=3.97, MS error=6.24, p<.003. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 3

Mean Ratings of Occurrence in Life as a Function of Condition X Sex Interaction

Condition	Sex	
	Male	Female
Hostile	3.67 ab	4.81 a
Prosocial	4.44 ab	2.96 b
Accidental	5.36 a	4.94 a

$F(2, 51)=3.91$, MS error=8.05, $p<.03$. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 4

Mean Ratings of Carelessness
a Function of Condition X Sex X Theme Interaction

Condition		Theme	
		Jogging	Shopping
Hostile	Male	5.65 ab	2.35 abc
	Female	5.50 abc	6.25 a
Prosocial	Male	3.88 bce	4.46 bce
	Female	4.71 bce	3.86 bce
Accidental	Male	4.77 bce	4.73 bce
	Female	4.19 bce	4.94 bce

F(2, 51)=5.14, MS error=1.65, p<.01. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 5

Mean Ratings of Confidence of Typicality
as a Function of Sex

Male	Female
5.02	5.87

F(1, 51)=6.48, MS error=6.24, p<.001. Higher numbers indicate higher ratings of the variable.

Table 6

Mean Ratings of Variables as a Function of Theme

Variables	Jogging	Shopping
Plausibility	4.84	4.32
F(1, 51)=7.01, MS error=.6, p<.01.		
Occurence in Life	4.73	4.12
F(1, 51)=8.5, MS error=2.13, p<.005.		

Higher numbers indicate higher ratings of the variable.

Table 7

Mean Ratings of Control as a Function of Sex X Theme Interaction

Sex	Theme	
	Jogging	Shopping
Male	3.88 ab	4.54 a
Female	4.52 a	4.00 ab

F(1,51)=10.8, MS error=1.84, p<.002. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 8

Mean Ratings of Predictability
as a Function of Sex X Theme Interaction

Sex	Theme	
	Jogging	Shopping
Male	3.57 [a]	4.16 [a]
Female	3.87 [a]	3.46 [a]

$F(1, 51)=6.39$, MS error=2.37, $p<.02$. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 9

Mean Ratings of Predictability as a Function
of Theme X Outcome Interaction

Theme	Outcome	
	Severe	Mild
Jogging	3.90 [a]	3.49 [b]
Shopping	3.82 [a]	3.93 [a]

$F(1, 51)=5.6$, MS error=.59, $p<.02$. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 10

Mean Ratings of Severity of Harm as a Function of Theme X Outcome Interaction

Theme	Outcome	
	Severe	Mild
Jogging	5.81 a	2.63 c
Shopping	5.88 a	3.30 b

$F(1, 51)=10.59$, MS error=.52, $p<.002$. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 11

Mean Ratings of Appropriatness as a Function of Sex X Outcome Interaction

Sex	Outcome	
	Severe	Mild
Male	3.07 ac	3.52 a
Female	3.48 ab	3.39 abc

$F(1, 51)=4.42$, MS error=.79, $p<.04$. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 12

Mean Ratings of Plausibility as a Function of Theme X Outcome Interaction

Theme	Outcome	
	Severe	Mild
Jogging	4.70 a	4.98 a
Shopping	3.95 b	4.68 a

$F(1, 51)=4.48$, MS error=.46, $p<.04$. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 13

Mean Ratings of Plausibility as a Function of Sex X Theme X Outcome Interaction

Sex		Outcome	
		Severe	Mild
Male	Jogging	4.91 a	5.09 a
	Shopping	3.82 b	4.76 a
Female	Jogging	4.39 a	4.83 a
	Shopping	4.13 a	4.56 a

$F(1, 51)=4.62$, MS error=.46, $p<.04$ Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 14
Mean Ratings of Typicality as a Function of Type of Aggression X Sex X Theme X Outcome Severity Interaction

	Male		Female	
	Severe	Mild	Severe	Mild
Hostile Aggression				
Jogging	5.40	4.80	6.25	5.75
Shopping	4.90	4.30	5.62	5.50
Prosocial Aggression				
Jogging	1.85	1.54	2.57	2.00
Shopping	1.69	1.54	2.71	1.86
Accidental Aggression				
Jogging	2.36	1.91	1.75	1.50
Shopping	2.36	2.27	1.25	1.38

$F(2, 51)=.58$, MS error=.33, p=ns. Higher numbers indicate higher ratings of the variable.

Table 15
Mean Ratings of Aggressiveness as a Function of Type of Aggression X Sex X Theme X Outcome Severity Interaction

	Male		Female	
	Severe	Mild	Severe	Mild
Hostile Aggression				
Jogging	6.30	5.70	6.62	6.38
Shopping	5.60	5.30	6.00	6.38
Prosocial Aggression				
Jogging	2.85	2.62	2.86	2.71
Shopping	2.23	2.31	2.71	3.14
Accidental Aggression				
Jogging	2.36	2.36	2.13	2.13
Shopping	2.73	2.54	1.38	1.25

$F(2, 51)=.12$, MS error=.19, p=ns. Higher numbers indicate higher ratings of the variable.

Table 16

Mean Ratings of Blameworthiness as a Function of Type of Aggression X Sex X Theme X Outcome Severity Interaction

	Male		Female	
	Severe	Mild	Severe	Mild
Hostile Aggression				
Jogging	6.10	5.80	6.62	6.38
Shopping	6.40	6.20	6.38	6.38
Prosocial Aggression				
Jogging	3.54	3.15	4.14	3.57
Shopping	3.69	2.92	3.86	3.29
Accidental Aggression				
Jogging	2.91	2.46	2.62	2.50
Shopping	4.00	3.82	2.00	2.00

$F(2, 51)=.15$, MS error=.52, p=ns. Higher numbers indicate higher ratings of the variable.

Table 17

Mean Ratings of Blameworthiness as a Function of Sex X Theme Interaction

Sex	Theme	
	Jogging	Shopping
Male	3.90 [a]	4.38 [a]
Female	4.33 [a]	4.00 [a]

$F(1, 51)=4.9$, MS error=1.95, $p<.03$. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 18

Mean Ratings of Aggressiveness as a Function of Theme X Outcome Interaction

Theme	Outcome	
	Severe	Mild
Jogging	3.79 a	3.58 b
Shopping	3.39 b	3.40 b

$F(1, 51)=4.44$, MS error=.19, $p<.04$. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

VII. Appendix B

Table 1

Mean Ratings of Words as a Function of Typicality

Typicality	High	Low
	4.68	3.79

$F(1, 43)=43.23$, MS error=1.16, $p<.001$. Higher numbers indicate higher ratings of the variable.

Table 2

Mean Ratings of Typicality as a Function of Aggression Type

Condition	Mean
Hostile	4.33 [a]
Prosocial	3.87 [a]
Accidental	4.42 [a]

$F(2, 43)=3.3$, MS error=2.44, $p<.05$ Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 3

Means Ratings of Typicality as a Function of Condition X Typicality Interaction

Condition	Typicality	
	High	Low
Hostile	5.01 a	3.65 b
Prosocial	4.05 b	3.68 b
Accidental	4.84 a	4.00 b

$F(2, 43)=4.84$, MS error=1.16, $p<.01$. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 4

Means for Typicality Ratings as a Function of Word Type

Word Type	Mean
Actions	4.81 a
Verbalizations	4.21 a
Emotions	3.68 a

$F(2, 86)=18.39$, MS error=1.54, $p<.001$. Means with different subscripts differ at alpha less than .05 by Neuman-Keuls. Higher numbers indicate higher ratings of the variable.

Table 5

Split-Half Correlations As a Function of Word Type and Condition

Condition	Correlation	p
Hostile		
Actions	.48	<.018
Verbalizations	.66	<.000
Emotions	.52	<.003
Prosocial		
Actions	-.20	ns
Verbalizations	.07	ns
Emotions	.23	ns
Accidental		
Actions	.08	ns
Verbalizations	.10	ns
Emotions	.15	ns

Correlations were performated on 19 cases of Actions, 22 cases of Verbalizations, and 25 cases of Emotions

Table 6

Frequency Distribution of Typicality Responses.

Ratings	Condition	
	Prosocial	Accidental
	%	%
1	54	48
2	22	30
3	11	13
4	7.5	5
5	1	1
6	2.5	2.5
7	0	0